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The Impact of a Roth Option on Outcomes in Employer-Sponsored Savings Plans

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Since 2006, U.S. employers have been able to include a Roth contribution option in their 401(k) or 403(b) retirement savings plan. Like contributions to a Roth IRA, employee contributions to a Roth 401(k) or 403(b) are not deductible from current taxable income, but withdrawals of principal, interest, and capital gains in retirement are tax-free. In this paper, we examine how the Roth 401(k) affects employee savings choices in the 401(k), focusing on three domains where employee confusion about the Roth is most likely to manifest itself.

First, we estimate how the total dollars contributed to the 401(k) as a fraction of income changes when the Roth is introduced. Past research suggests that many employees choose their 401(k) contribution rate using rules of thumb such as "Contribute the minimum amount necessary to earn the maximum employer match," "Contribute the maximum amount allowed by the plan," or "Contribute 10% of my income." If such rules of thumb dominate decision-making, then the introduction of the Roth will have no effect on total contribution rates. But Roth contributions generally buy more post-retirement consumption, because they are not taxed at withdrawal. So it's as if contributors have set aside more resources in the plan for post-retirement use.

Second, we measure how the fraction of total contributions allocated to the Roth changes as the total contribution rate increases beyond the employer match threshold. By law, the employer match must be made entirely in before-tax dollars. In past research, we document that when the employer match's asset allocation is not salient, employees choose the asset allocation of their own contributions without considering the match's asset allocation. If the match's contribution type is also not salient, then employees will distribute their own contributions across contribution types without adjusting for the fact that the employer match is entirely in before-tax dollars. This lack of adjustment will cause, all else equal, the proportion of 401(k) contributions that are in before-tax dollars to be lower—and the proportion in Roth dollars higher—among employees who contribute above the match threshold.

Third, we explore what types of employees are most likely to contribute to the Roth. Roth contributions are most advantageous to households whose current marginal tax rate is lower than their marginal tax rate in retirement. If households understand this fact, then we would expect younger, lower-income employees to allocate more contributions to the Roth.

We find mixed evidence on whether introducing a Roth option lowers total contribution rates. Comparing contribution rates of employees hired one year prior to the Roth introduction to employees hired immediately after the Roth introduction yields no significant evidence of a Roth effect on total contribution rates, which means that the total amount of retirement consumption being purchased via the 401(k) increases. Comparing contribution rates of employees who enrolled in the month prior to the Roth introduction to employees who enrolled in the month after the Roth introduction yields evidence of a 1% of income contribution rate decrease, but this is significant only at the 10% level once we control for employee characteristics and time trends.

We find that the fraction of total employee contributions allocated to the Roth does not vary with the total employee contribution rate above the match threshold. As a result, the fraction of employee plus match contributions allocated to the Roth increases with the total employee contribution rate above the match threshold, since matching contributions are made entirely in before-tax dollars. This behavior could be consistent with employees ignoring the match contribution's allocations when making choices about how to allocate their own contributions.

Finally, we find that young, low-income employees are the most likely to participate in the Roth. Since the marginal tax rate on future 401(k) withdrawals must be lower than the current marginal ordinary income tax rate in order for Roth contributions to be more attractive than before-tax 401(k) contributions, this pattern is directionally consistent with optimal behavior.

The full working paper is available on our website, www.nber.org/programs/ag/rrc/books&papers.html as paper NB12-06.

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